

PUBLIC POLICY FOR THE

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Note No. 155

October 1998

Corporate Finance Lessons from the East Asian Crisis

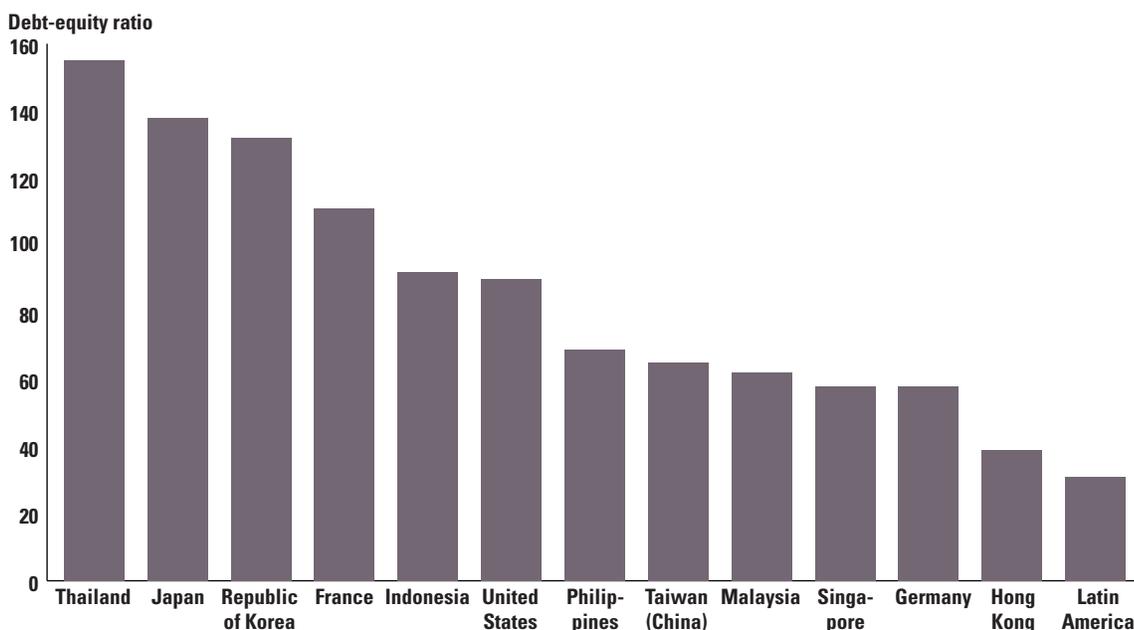
Michael
Pomerleano

This Note examines the corporate roots of the financial crisis in East Asia. It summarizes the findings of a study of corporate financial performance in East Asian economies—Hong Kong, Indonesia, the Republic of Korea, Malaysia, the Philippines, Taiwan (China), and Thailand.¹ To allow a consistent cross-border analysis of financial risk and performance, the study used as benchmarks key financial performance ratios for corporations in France, Germany, Japan, the United States, and Latin America.

For some Asian economies, especially Indonesia, Korea, and Thailand, clear evidence emerged

of a rapid and unsustainable buildup of investment in fixed assets financed by excessive borrowing. This investment spending spree resulted in poor profitability, reflected in low and declining returns on equity and on capital employed. The study concluded that at the core of the corporate crisis were financial excesses that inevitably led to financial distress. The findings support the view advanced by Paul Krugman (1998) that crony capitalism—and the associated policies of implicit guarantees—and poor banking supervision led to poor credit decisions in the banking system and thus the misallocation of resources.

FIGURE 1 AVERAGE CORPORATE LEVERAGE, 1996



Note: Data are for December 31.

Source: World Bank staff calculations based on the Financial Times Information's Extel database.



Financial indicators

The study assessed corporate financial practices and performance using standard ratio analysis focusing on leverage, the growth and financing of tangible fixed assets, and debt sustainability. It captured corporate performance and profitability through ratios measuring return on capital employed and economic value added. It supplemented the ratio analysis with an indicator of corporate financial fragility—Altman's Z-score.

Leverage

The debt-equity ratio—a company's debt divided by shareholder equity—indicates a company's leverage—how much borrowed money the company is using relative to its equity. The study found wide variation in debt-equity ratios in Asia and in the sample overall (figure 1). Data for December 31, 1996, show that Korean and Thai companies generally had high debt-equity ratios (around 150 percent), while those in Hong Kong, the Philippines, and Taiwan (China) had moderate ratios. Latin American, German, and U.S. companies had modest debt-equity ratios (90 percent in the United States).

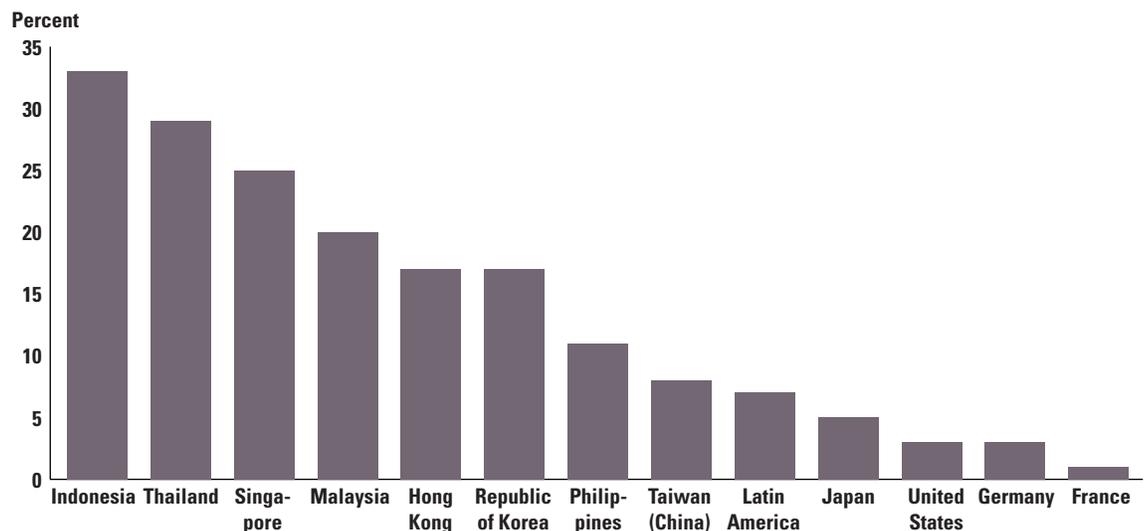
Growth and financing of tangible fixed assets

The study's results point to a rapid buildup of fixed assets in Asia (figure 2). The average change in tangible fixed assets during 1992–96 was 33 percent in Indonesia, 29 percent in Thailand, and 20 percent in Malaysia. This rapid growth is in stark contrast with the more moderate pattern in Hong Kong (17 percent) and in the industrial countries in the sample (1 to 5 percent). These findings evidence the untenable business growth in Asian economies. No well-managed company (with the possible exception of software companies) can prudently absorb annual growth of 30 to 40 percent. Such rapid growth would overwhelm managerial capacity and distribution and marketing channels.

Debt sustainability

To analyze debt sustainability, the study calculated the ratio of companies' operating cash flows (operating income before interest, taxes, and depreciation) to their annual interest payments on loans or their debt service (principal plus interest payments). This ratio indicates

FIGURE 2 AVERAGE CHANGE IN TANGIBLE FIXED ASSETS, 1992–96



Source: World Bank staff calculations based on the Financial Times Information's Extel database.

companies' ability to cover interest payments or debt service on their outstanding loans.

The findings indicate big differences across countries (figure 3). The interest coverage ratio in Thailand declined from 4.6 in 1992 to 1.92 in 1996 as an increasing debt-equity ratio led to a rise in interest expense. The ratios in other vulnerable Asian countries were similar: 2.44 in Indonesia in 1996 and 1.07 in Korea in 1995. Corporations in Hong Kong, Malaysia, and Taiwan (China) are more robust. Also quite robust are those in Latin America (25.36 in 1996) and in some industrial countries—the United States (7.62), Germany (7.09), France (4.75), and Japan (4.31). Standard & Poor's credit rating policies put these findings in context (table 1). To earn an A-rating, U.S. companies must have a ratio of operating cash flows to interest of more than 8.

Return on capital employed

Return on capital employed or on assets (before taxes) captures the efficiency with which a company uses all its capital resources. Analysis of this ratio permits comparison of businesses regardless of differences in accounting conventions (for example, with regard to depreciation) or capital mobilization and financ-

TABLE 1 STANDARD & POOR'S RATING REQUIREMENTS FOR FINANCIAL RATIOS, BY RATING LEVEL
Percent

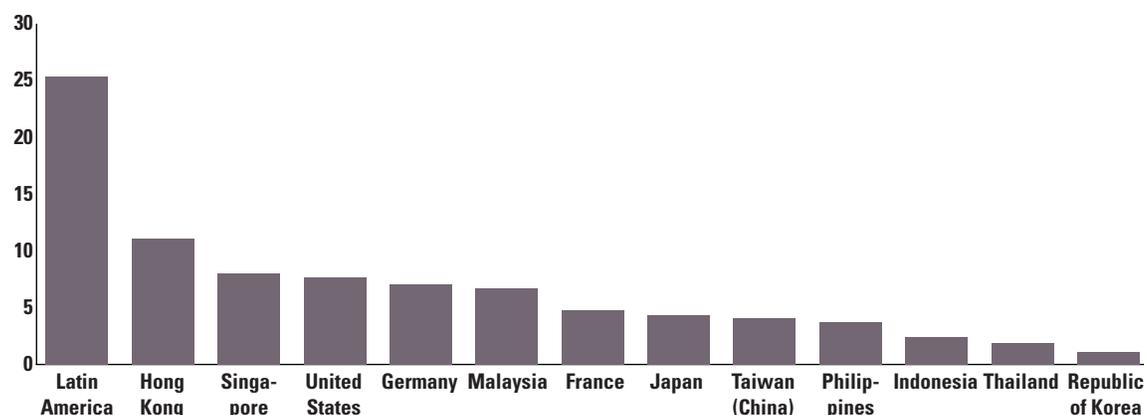
Ratio	AAA	AA	A	BBB	BB	B
Interest coverage ratio	20.3	14.94	8.51	6.03	3.63	2.27
Funds from operations/ total debt	116.4	72.3	47.5	34.7	18.4	10.9
Pretax return on capital	31.5	23.6	19.5	15.1	11.9	9.1
Operating income/sales	24.0	19.2	16.1	15.4	15.1	12.6
Long-term debt/capital	13.4	21.9	32.7	43.4	53.9	65.9
Total debt/capitalization	23.6	29.7	38.7	46.8	55.8	68.9

Note: Ratios are calculated as three-year (1994–96) medians.
Source: Standard & Poor's Ratings Service 1997.

ing strategies, because the operating profit is viewed in relation to the total funds employed.

The study's results show a solid 20 percent average return on capital employed in Hong Kong in 1992–96 (figure 4). The ratio for Indonesia, at 11 percent, is good in absolute terms (though overshadowed by domestic interest rates of 15 to 18 percent). The results for Korea, Malaysia, the Philippines, Taiwan (China), Latin America, and the industrial countries (France, Germany, Japan, and the United States) reflect large differences in average return on capital during 1992–96. While the average return in the United

FIGURE 3 AVERAGE INTEREST COVERAGE RATIO, 1996



Note: Ratio of operating cash flows (operating income before interest, taxes, and depreciation) to interest payable on loans.
Source: World Bank staff calculations based on the Financial Times Information's Extel database.

States was 11 percent, in Korea it was 8 percent. Latin America's reasonable return on capital of 16 percent masks high inflation rates. The average return in some industrial countries—such as the 5 percent in France and Japan and the 4 percent in Germany—was surprisingly paltry.

The study's analysis of the return on capital employed in Thailand, supplemented by the debt-equity ratio, suggests that it was no accident that the East Asian crisis first erupted in Thailand. Measures of financial risk show that Thailand was an outlier in every regard. The performance of Thai companies progressively deteriorated during 1992–96: credit ratios declined, margins were squeezed, and return on equity declined significantly, from 13 percent in 1992 to 5 percent in 1996.

Economic value added

To examine opportunity costs of capital the study applied the concept of shareholder economic value added. This indicator compares the reported profitability of a corporation—the measured return on capital employed—with the cost of capital, defined as the interest rate (figure 5).

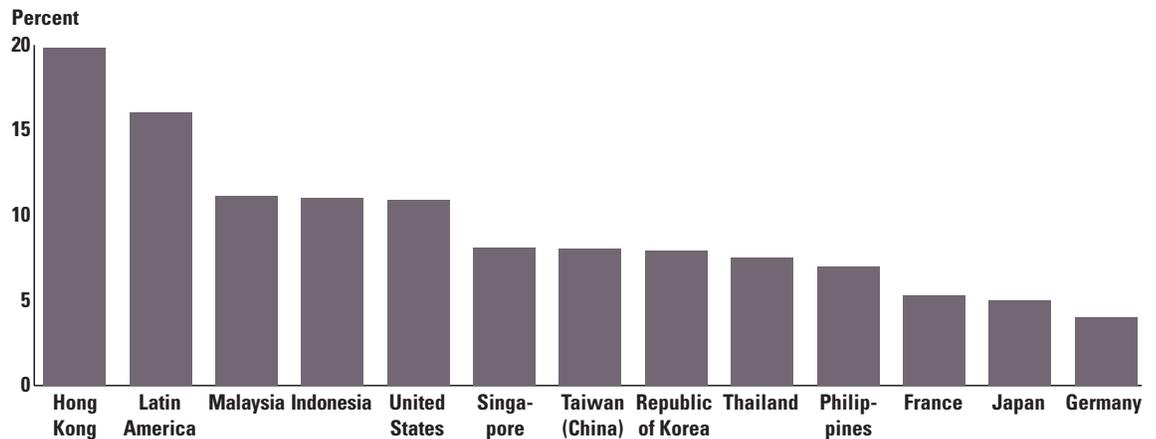
The study's results show that only for Hong Kong, Japan, Malaysia, Singapore, and the United States

did the return on capital employed consistently exceed the cost of capital during 1992–96—and except for Hong Kong, not by a significant margin. But there are significant intertemporal differences for countries: declining trends in economic value added in Thailand highlight the economy's deterioration. Japan's positive economic value added is attributable largely to the country's low prevailing interest rates rather than a high return on capital employed. By contrast, the analysis suggests that the negative economic value added in Indonesia is explained by the high prevailing domestic interest rates.

Financial fragility

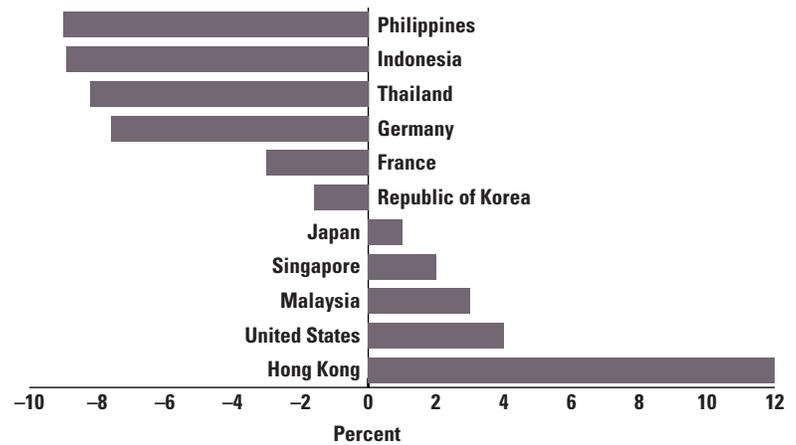
Estimating Altman's Z-score, the indicator of financial fragility, involves calculating five ratios found in a company's financial statements: return on total assets, sales to total assets, equity to debt (the inverse of the debt-equity ratio), working capital to total assets, and retained earnings to total assets. These ratios are then adjusted by predetermined weights and added together to yield the Z-score, which ranges from –4 to +8. Companies with Z-scores above 2.99 are considered financially sound, while those scoring below 1.81 are financially distressed and face possible bankruptcy. Scores between 1.81 and 2.99 indicate vulnerability.

FIGURE 4 AVERAGE RETURN ON CAPITAL EMPLOYED, BEFORE TAXES, 1992–96



Source: World Bank staff calculations based on the Financial Times Information's Extel database.

FIGURE 5 AVERAGE ECONOMIC VALUE ADDED, 1992–96



Note: Calculated as return on capital employed minus the lending rate.
Source: World Bank staff calculations based on the Financial Times Information's Extel database.

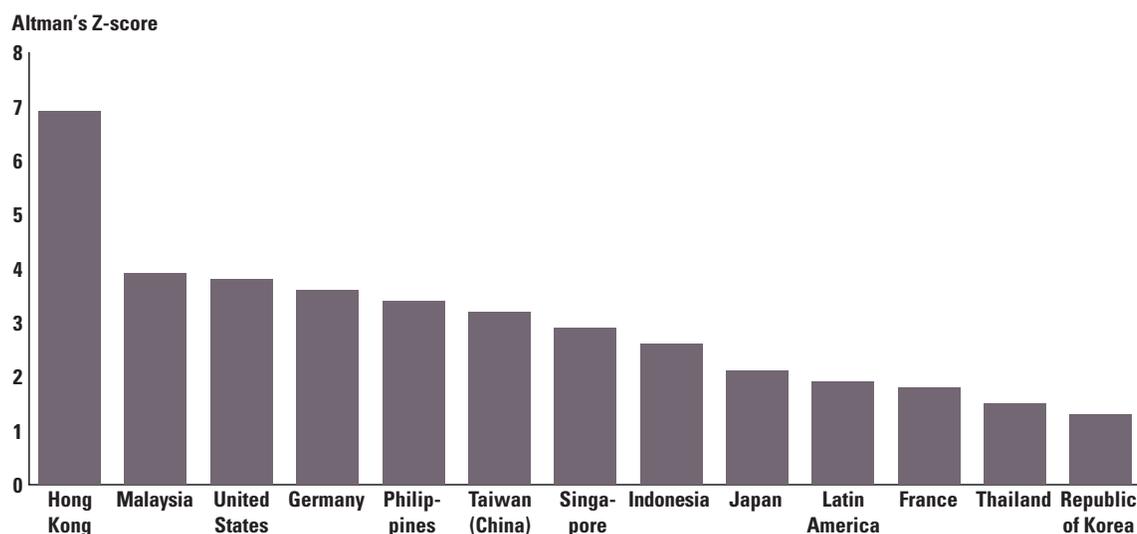
The study's Z-score results suggest considerable fragility of the corporate sector in some Asian economies and in France, confirming results for other ratios (figure 6). By 1996 Z-scores for Asia evidenced severe financial distress in Thailand (1.5) and Korea (1.6). Indonesia's Z-score (2.7) was marginally below the financially sound level of 2.99. By contrast, corporate sectors were robust in Hong Kong (6.9), Malaysia (3.9), the Philippines (3.4), and Taiwan, China (3.2). Among industrial countries the Z-scores suggested vulnerability in France (1.8) and Japan (2.1).

Implications

What are the implications of these financial indicator levels for recent Asian corporate performance? A partial picture emerges from research papers now coming out of investment banks. This research shows that corporations suffered significant damage as a result of high debt-equity ratios in a context of rising interest rates and a worsening economic environment, coupled with exposure to unhedged foreign currency loans. A large number of Asian corporations have become insolvent and will have to be recapitalized.

The findings of this study lead to several conclusions. First, corporations in Indonesia, Korea, and Thailand tried to defy financial "laws of gravity" that can be ignored only at the risk of financial distress. Business practices in some Asian countries reflect a lack of financial discipline and, to a lesser extent, of operational discipline. The investment spending spree contributed to the erosion of profit margins and to poor financial performance, reflected in declining and low returns on equity and on capital employed. By contrast, corporations in Hong

FIGURE 6 AVERAGE CORPORATE FINANCIAL FRAGILITY, 1996



Source: World Bank staff calculations based on the Financial Times Information's Extel database.

Kong, Malaysia, and Taiwan (China) pursued prudent financial practices.

Second, the large differences in economic value added among the study countries lead to the conclusion that Asian corporations have not adopted global standards on creating shareholder value. In an era of increasing capital mobility, when capital can rapidly arbitrage differences in rates of return, disparities in underlying returns on equity and on capital employed probably are not sustainable in the long run. To ensure availability of equity capital and improved equity market performance, corporations need to demonstrate to investors that they can sustain solid performance in economic value added.

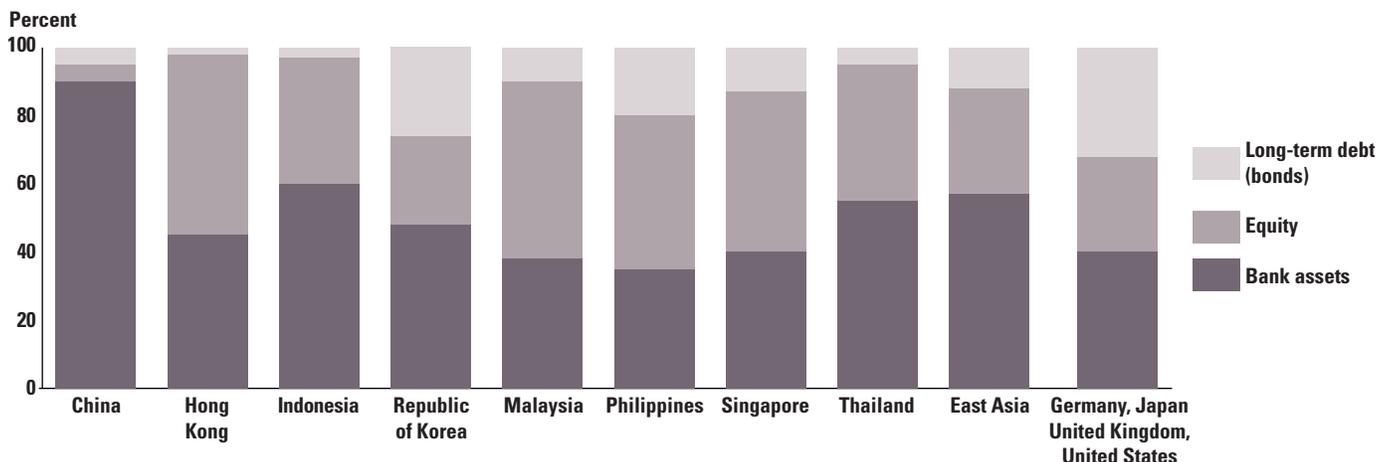
Third, the poor operating and financial performance in the crisis countries relative to that in other countries suggests a need for systemic corporate restructuring. A restructuring process needs to reflect a readiness to address insolvent corporations through court-supervised reorganization or bankruptcy, promotion of voluntary restructuring of distressed and illiquid—but operationally viable—corporations through debt-equity swaps, and assurance of the liquidity needed during the workout process through provision for debtor-in-possession

financing. A restructuring process must also recognize that some corporations might not be salvageable.

In addition, the study supports findings from other research about the efficiency of financial intermediation in Asia. In this region, where household savings amount to about a third of gross domestic product (GDP), the high savings have been largely channeled by banks to businesses. The pursuit of rapid economic growth in the region limited the capacity of internal earnings generation to buffer accumulation of debt, resulting in high corporate leverage. Indeed, Asia's high-debt, high-risk model of economic development is a direct result of the savings intermediation process in the region's economies. Asia's high corporate leverage contrasts with that in countries with slower growth and more balanced financial systems, including well-developed equity and bond markets.

Most of the study countries with poor return on capital employed have underdeveloped capital markets. Asia's bond markets, for example, are less than 20 percent of regional GDP, small in comparison with developed bond markets such as that in the United States, which is more than 100 percent of GDP. Comparative

FIGURE 7 COMPOSITION OF CORPORATE FINANCIAL ASSETS, BY TYPE, 1995



Source: World Bank staff calculations based on the Financial Times Information's Extel database.

statistics on financial sector development suggest that, in general, Asian economies have exhibited overdependence on the banking sector and underreliance on capital markets (figure 7). The key ingredients for successful capital markets—transparency, corporate accountability and governance, and proper risk pricing through the transmission of market signals—have been lacking. These limitations underlie the deficiencies in the performance of Asian corporations. And they may have amplified the effects of the corporate excesses, leading to the crisis. A more open, balanced, and competitive financial system is needed in Asia, one in which capital is allocated more transparently and with appropriate consideration of risk. Increased reliance on capital markets—and the attendant benefits in transparency, risk assessment, risk pricing, and risk dispersion—would enhance corporate discipline and performance in Asia.

The main study also supports the findings of recent research on the role of portfolio capital inflows in stock market valuations. The rapid increase in foreign participation in the early 1990s occurred in the context of large, closely held share positions and limited public shareholding. Foreign investors now have a significant ownership presence and account for a significant share of transactions in Asian capital markets. The “exuberant” valuations in East Asia may have been associated with large portfolio equity inflows in an illiquid market, a situation in which marginal flows might have had a disproportionate effect on valuations. But portfolio flows ranged between 1 and 6 percent of free-float market capitalization, and although additional research on this issue is needed, preliminary research suggests that it is unlikely that portfolio equity flows had a marked impact on valuations.²

Finally, it is interesting to note that these microeconomic excesses occurred in a region known for macroeconomic discipline. Several supposed safety mechanisms had been built into Asian financial systems by policymakers to manage the microeconomic risks, including

mild interest rate suppression that subsidized corporations at the expense of savers. In addition, established, long-term relationships between companies and banks turned debt into quasi-equity (the proverbial Asian “ever-greens”). But such relationships allowed lax credit approval processes, often without reference to projects’ viability and possibly based on political connections.

The study’s findings suggest that the lack of financial and institutional discipline—coupled with the recent financial sector liberalization in some countries and the imposition of market discipline (including the lifting of interest rate controls) in an environment without an adequate prudential framework—is a plausible explanation of the mix of currency, corporate, and banking crises confronting the region. The implications for regulation and supervision of the financial system are unmistakable.

This Note is based on a longer article by the author: “The East Asia Crisis and Corporate Finances—The Untold Micro Story,” *Emerging Markets Quarterly* (forthcoming).

- ¹ The analysis compared the financial profile and performance of Asian corporations with those of corporations in the other countries. The study used financial information on companies for 1992–96 from the Financial Times Information’s Extel database, which contains basic data on more than 13,000 companies worldwide. The companies selected for the analysis were general manufacturing firms, extractive industries, and utilities for which there were financial statements for five consecutive years ending in 1996. The number of companies in the sample and the size of their sales relative to GDP suggest that the sample is robust.
- ² Bekart and Harvey (1997) find that the cost of capital always falls after capital market liberalization and that there is little impact on volatility. Other evidence on the effect of capital flows on domestic markets comes from a recent study on foreign participation in the Korean equity market. Choe, Kho, and Stultz (1998) examine the impact of foreign investors on stock returns in the Republic of Korea from November 30, 1996, to the end of 1997 using trade data. They find no evidence that trades by foreign investors had a destabilizing effect on Korea’s stock market over the sample period; instead, they find that the Korean market adjusted to large sales by foreign investors. Post and Millar (1998), examining U.S. emerging market equity funds during 1996 and 1997, find that shareholders in U.S. funds invested in Asia started to withdraw modest shares of their investments in late 1996 and stepped up the pace of withdrawals somewhat in 1997.

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Michael Pomerleano (mpomerleano@worldbank.org) Senior Capital Market Specialist, Capital Markets Development Department

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